Having described the invention, the following is claimed:

1. A system for helping to protect a vehicle occupant, said system comprising:

a crash sensor operative to sense a vehicle crash event and provide a crash signal having a characteristic indicative of the sensed crash event;

an acoustic safing sensor operative to sense acoustic waves of the vehicle during a vehicle crash event and provide a safing signal having a characteristic indicative of the sensed acoustic waves;

an actuatable occupant protection device for, when actuated, helping to protect the vehicle occupant during a vehicle crash event; and

a controller which controls actuation of said occupant protection device in response to both said crash signal and said safing signal.

2. A system as set forth in claim 1 wherein said crash sensor is an accelerometer.

3. A system as set forth in claim 2 further including a sensor module mountable within a vehicle, said sensor module including said acoustic sensor and said accelerometer.

4. A system as set forth in claim 2 wherein said acoustic sensor is an omni-directional ultrasonic sensor for sensing ultrasonic acoustic waves of the vehicle during vehicle crash events originating in any of a plurality of directions and providing said safing signal indicative thereof.

5. A system as set forth in claim 4 further including a sensor module mountable within a vehicle, said ultrasonic sensor being part of said sensor module, said accelerometer being a crush zone sensor remote from said sensor module for sensing vehicle acceleration of part of the vehicle indicative of a vehicle crash event and providing said crash signal having an electrical characteristic indicative thereof.

6. A system as set forth in claim 5 wherein said crush zone sensor is a front crush zone sensor located at a forward part of the vehicle and electrically

connected with said controller, said front crush zone sensor sensing a front impact vehicle crash event in response to movement of the forward part of the vehicle and providing a front crash signal indicative thereof, said controller controlling actuation of said occupant protection device in response to both said safing signal and said front crash signal.

7. A system as set forth in claim 5 wherein said crush zone sensor is a side crush zone sensor located at a side part of the vehicle and electrically connected with said controller, said side crush zone sensor sensing a side impact vehicle crash event in response to movement of the side part of the vehicle and providing a side crash signal indicative thereof, said controller controlling actuation of said occupant protection device in response to both said safing signal and said side crash signal.

8. A system as set forth in claim 1 wherein said crash sensor further includes a plurality of accelerometers, each of said plurality of accelerometers being operative to sense vehicle acceleration and provide a respective acceleration

signal, said controller controlling actuation of said occupant protection device in response to an acceleration signal from at least one of said plurality of accelerometers and said safing signal, whereby the acoustic safing sensor provides an omni-directional safing sensor for each of the plurality of accelerometers.

9. A system as set forth in claim 8 further including a sensor module mountable within a vehicle, said acoustic sensor and at least one of said plurality of accelerometers being part of said sensor module.

10. A system for helping to protect a vehicle occupant, said system comprising:

a plurality of crash event sensors, each of said plurality of crash event sensors being operative to sense a different condition of the vehicle and to provide a corresponding sensor signal having a characteristic indicative of the vehicle condition sensed thereby;

an acoustic sensor operative to sense acoustic waves of the vehicle during a vehicle crash

event and to provide a safing signal having a characteristic indicative of the sensed acoustic waves;

an occupant protection device for, when actuated, helping to protect the vehicle occupant during a vehicle crash event; and

a controller connected with each of said plurality of crash event sensors, said acoustic safing sensor, and said occupant protection device, said controller determining the occurrence of a vehicle crash event and controlling actuation of said occupant protection device in response to the sensor signal from any one of said plurality of crash event sensors and the safing signal from said acoustic sensor, whereby the acoustic sensor provides omni-directional safing for the plurality of crash event sensors.

11. A system as set forth in claim 10 wherein each of plurality of said crash event sensors is selected from a group consisting of an accelerometer and a crush zone sensor.

12. A system as set forth in claim 10 further including a sensor module mountable within a vehicle, said acoustic sensor being part of said sensor module.

13. A system as set forth in claim 12 wherein said at least one of said plurality of crash event sensors is part of said sensor module.

14. A system for helping to protect a vehicle occupant, said system comprising:

a sensor module for mounting in a vehicle, said sensor module including:

an accelerometer operative to sense vehicle acceleration and provide an acceleration signal having a characteristic indicative of the sensed vehicle acceleration; and

an acoustic sensor operative to detect acoustic waves of the vehicle during a vehicle crash event and to provide a safing signal having a characteristic indicative of the sensed acoustic waves;

an occupant protection device for, when actuated, helping to protect the vehicle occupant during a vehicle crash event; and

a controller which controls actuation of said occupant protection device in response to both said acceleration signal and said safing signal.

15. A system as set forth in claim 14 wherein said sensor module further includes a plurality of accelerometers, each of said plurality of accelerometers being operative to sense vehicle acceleration and provide a respective acceleration signal indicative of the vehicle acceleration sensed thereby, said controller controlling actuation of said occupant protection device in response to the acceleration signal from at least one of said plurality of accelerometers and said safing signal from said acoustic sensor, whereby the acoustic sensor provides omni-directional safing for the plurality of accelerometers.

16. A system as set forth in claim 14 further including a side crush zone sensor located at a side part of the vehicle and electrically connected with said controller, said side crush zone sensor sensing a side impact vehicle crash event in response to acceleration of the side part of the vehicle and providing a side crash signal indicative thereof, said controller controlling actuation of said occupant protection device in response to both said safing signal and said side crash signal.

17. A method for controlling actuation of an actuatable occupant protection device of a vehicle, said method comprising the steps of:

sensing a vehicle crash condition;

providing an crash event signal having a characteristic indicative of the sensed vehicle crash condition;

sensing acoustic waves that travel through the vehicle in response to the occurrence of the vehicle crash condition;

providing a safing signal having a characteristic indicative of the sensed acoustic waves during the vehicle crash condition;

determining the occurrence of a vehicle crash event in response to the crash event signal and the safing signal indicating a vehicle crash condition; and

controlling actuation of an occupant protection device in response to said determination.

18. A method as set forth in claim 17 further including providing a plurality of crash event sensors, each of the crash event sensors sensing a vehicle crash condition and providing a crash event signal indicative

of the vehicle crash condition sensed thereby, said step of determining a vehicle crash event further including determining the occurrence of a vehicle crash event in response to the crash signal from at least one of the plurality of crash event sensors and the safing signal from the acoustic sensor, whereby the safing signal provides omni-directional safing for the plurality of crash event sensors.

19. A method as set forth in claim 18 wherein each crash sensor is an accelerometer that provides an acceleration signal indicative of vehicle acceleration.

20. A method as set forth in claim 17 further including mounting a front crush zone sensor at a forward part of the vehicle, said step of sensing a vehicle crash condition including sensing a front impact vehicle crash event with the front crush zone sensor, the crash event signal being a front crash signal indicative of the sensed front impact vehicle crash event sensed by the front crush zone sensor, actuation of the occupant protection device being controlled in response to both the safing signal and the front crash signal.

21. A method as set forth in claim 17 further including mounting a side crush zone sensor at a side part of the vehicle, said step of sensing a vehicle crash condition including sensing a side impact vehicle crash event with the side crush zone sensor, the crash event signal being a side crash signal indicative of the sensed side impact vehicle crash event sensed by the side crush zone sensor, actuation of the occupant protection device being controlled in response to both the safing signal and said the crash signal.

22. A system for helping to protect a vehicle occupant, said system comprising:

means for sensing a vehicle crash condition and providing an crash event signal having a characteristic indicative thereof;

means for sensing acoustic waves that travel through the vehicle in response to the occurrence of the vehicle crash condition and providing a safing signal having a characteristic indicative thereof; and

control means for determining the occurrence of a vehicle crash event in response to the crash event signal and the safing signal and controlling actuation

of an occupant protection device in response to the determination.